

REMARKS

Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are currently pending in the application.

This amendment is in response to the Office Action of August 21, 2007.

35 U.S.C. § 112 Claim Rejections

Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants have amended the claimed invention for the presently claimed invention to particularly point out and distinctly claim the subject matter of the invention to comply with the provisions of 35 U.S.C. § 112. Therefore, presently amended claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are allowable under the provisions of 35 U.S.C. § 112.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on Weng et al. (U.S. Patent 5,972,234)

Claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Weng et al. (U.S. Patent 5,972,234) in view of Ishiwata et al. (U.S. Patent 5,300,172). Applicants respectfully traverse this rejection, as hereinafter set forth.

To establish a *prima facie* case of obviousness the prior art reference (or references when combined) **must teach or suggest all the claim limitations**. *In re Royka*, 490 F.2d 981, 985 (CCPA 1974); *see also* MPEP § 2143.03. Additionally, there must be “a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742, 167 L.Ed.2d 705, 75 USLW 4289, 82 U.S.P.Q.2d 1385 (2007). Finally, to establish a *prima facie* case of obviousness there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Furthermore, the reason that would have prompted the combination and the reasonable expectation of success must be found in the prior art,

common knowledge, or the nature of the problem itself, and not based on the Applicant's disclosure. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1367 (Fed. Cir. 2006); MPEP § 2144. Underlying the obvious determination is the fact that statutorily prohibited hindsight cannot be used. *KSR*, 127 S.Ct. at 1742; *DyStar*, 464 F.3d at 1367.

After carefully considering the cited prior art, the rejections, and the Examiner's comments, Applicants have amended the claimed invention to clearly distinguish over the cited prior art.

Turning to the cited prior art, Weng et al. teaches or suggests a method for marking a semiconductor surface. Weng et al. describe a polymeric tape can be provided that is suitable for ablative photodecomposition. Column 4 lines 25-40. In other words, the mark which is to be formed in the semiconductor surface is first formed as a cavity through the tape using "high-intensity energy beams such as ultraviolet light or laser." Column 4 lines 32-33; *See also* column 2 lines 63-63, column 3 lines 6-11, column 3 lines 22-23, column 3 lines 27-30, column 3 lines 39-40, column 4 lines 52-54. After the mark has been formed *through* the tape, the tape is applied to the semiconductor surface. Column 4 line 57 – column 5 line 7. Finally, the mark is formed in the semiconductor surface by etching the semiconductor in the area exposed by the mark formed in the tape. The tape protects the rest of the semiconductor surface from the etchant, such that the mark in the tape is patterned into the semiconductor surface. Column 5 lines 8-25. Finally, the tape is removed from the surface of the semiconductor, leaving the mark formed by the etchant. Column 5 lines 27 – 37. The tape has a thickness of about 0.5 mm and can be provided with an adhesive backing or without an adhesive backing. Column 5, lines 38-41. A suitable adhesive may be an acrylic type polymer. Column 4, lines 63,64. Weng et al. does not teach or suggest forming a mark on a semiconductor surface using an ultraviolet light or laser to cause adhesive of the tape to cure and bond to the semiconductor surface forming a mark thereon as only an etching process forms a mark on the semiconductor surface.

The Ishiwata et al. reference teaches or suggests the use of a radiation curable adhesive tape on a wafer to form a three dimensional network.

Applicants assert that any combination of the Weng et al. reference in view of the Ishiwata et al. reference fails to establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the claimed inventions of presently amended independent claims 1, 9, and 17 because cited prior art fails to teach or suggest all the claim limitations and the suggestion to make the claimed combination and the reasonable expectation of success is found solely in Applicants' disclosure, not the cited prior art.

Applicants assert that the cited prior art fails to teach or suggest the claim limitations of presently amended independent claims 1, 9, and 17 calling for “a marking tape comprising a material having a coefficient of thermal expansion substantially similar to the semiconductor device and antistatic properties; and a multilayer adhesive including: a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components having properties of a first type, the electromagnetic radiation-curable components providing a laser-markable surface upon exposure to an electromagnetic radiation source by curing and bonding to at least a portion of a semiconductor device forming a mark on the semiconductor device by the electromagnetic radiation-curable components curing and remaining on the semiconductor device when a laser marks a semiconductor device; and a second adhesive layer separate and distinct from the first outermost adhesive layer having second properties different than the properties of the first type of the first outermost adhesive layer disposed between the tape and the first outermost adhesive layer, the second adhesive layer having second properties comprising a mixture of electromagnetic radiation-curable components upon exposing to radiation the second adhesive layer facilitating peeling of a flexible film material when laser marking a semiconductor device, the second adhesive layer free of the properties of a first type of the first outermost adhesive layer”, “a marking tape having a coefficient of thermal expansion substantially similar to the semiconductor device; and a multilayer adhesive including: a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components having properties of a first type providing a mark on a laser-markable surface upon exposure thereof to electromagnetic radiation by curing and bonding to at least a portion of a semiconductor device by the electromagnetic radiation-curable components curing and remaining on the semiconductor device when a laser marks a semiconductor device; and a second adhesive layer separate and

distinct from the first outermost adhesive layer having second properties different than properties of the first type of the first outermost adhesive layer disposed between the flexible film material and the first outermost adhesive layer, the second adhesive layer having second properties comprising a mixture of electromagnetic radiation-curable components upon exposing to radiation the second adhesive layer facilitating peeling of a flexible film material when laser marking a semiconductor device”, and “a marking tape having a material having a coefficient of thermal expansion substantially similar to the semiconductor device and antistatic properties; and at least two layers of adhesive including: a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components having properties of a first type providing a mark on a surface upon exposure thereof to electromagnetic radiation by curing and bonding to at least a portion of a semiconductor device, the radiation-curable components forming the mark by curing and bonding to a surface of the semiconductor device when a laser marks a semiconductor device; and a second adhesive layer separate and distinct from the first outermost adhesive layer having second properties different than the properties of the first type of the first outermost adhesive layer disposed between the film material and the first outermost adhesive layer, the second adhesive layer having second properties comprising a mixture of electromagnetic radiation-curable components upon exposing to radiation the second adhesive layer solely facilitating peeling of a flexible film material when laser marking a semiconductor device”.

Applicants assert that no combination of the Weng et al. reference and the Ishiwata et al. reference teaches or suggests the use of a tape which has a portion of the first layer of the adhesive thereof left on a semiconductor device for a mark after electromagnetic radiation has been applied thereto and a second layer of adhesive which facilitates the removal of the tape from the semiconductor device. Applicants assert that, in contrast to the presently claimed inventions of presently amended independent claims 1, 9, and 17, the Weng et al. reference, at best, teaches or suggests a tape having one single adhesive layer, not a tape having multilayer adhesive used to make a cavity in which an etchant is used to mark the semiconductor device, not electromagnetic radiation as required by the claimed inventions, while the Ishiwata et al. reference teaches or suggests the use of a radiation curable adhesive tape on a wafer to form at three dimensional

network while any combination of the Weng et al. reference and the Ishiwata et al. reference teaches or suggests a tape having one adhesive layer used to form a three dimensional network. Further, Applicants assert that since Weng et al. does not teach or suggest using a tape that has laser markable surface, the etchant in Weng et al. marks the semiconductor device, and since Ishwata et al. teach or suggest the use of a radiation cured adhesive used to form a three dimensional network, any rejection based upon the Weng et al. reference and the Ishawa et al. reference is a hindsight reconstruction of the Applicants inventions based solely upon Applicants' disclosure because neither Weng et al. contains any such teaching or suggestion and Ishawa et al. merely forms three dimensional networks using adhesive.

Applicants assert that the claimed inventions of presently amended independent claims 1, 9, and 17 clearly contain patentable distinct elements of the invention not described, taught or suggested in the cited prior art. Applicants assert that the claimed inventions clearly describe and claim as elements of the inventions a tape having two distinct and separate layers of adhesive, each layer having a different structure. Applicants assert that the a first outermost adhesive layer is an element of the invention requiring a first outermost adhesive layer comprising a mixture of electromagnetic radiation-curable components having properties of a first type, the electromagnetic radiation-curable components providing a laser-markable surface upon exposure to an electromagnetic radiation source by curing and bonding to at least a portion of a semiconductor device forming a mark on the semiconductor device by the electromatnetic radiation- curable components curing and remaining on the semiconductor device when a laser marks a semiconductor device. Applicants assert that the second adhesive layer is an element of the invention requiring a second adhesive layer separate and distinct from the first outermost adhesive layer having second properties different than properties of the first type of the first outermost adhesive layer disposed between the flexible film material and the first outermost adhesive layer, the second adhesive layer having second properties comprising a mixture of electromagnetic radiation-curable components upon exposing to radiation the second adhesive layer facilitating peeling of a flexible film material when laser marking a semiconductor device. Applicants assert that neither the Wang et al. reference nor the Ishiwata et al. reference nor any combination of the Wang et al. reference and the Ishiwata et al. reference contains any

description, teaching or suggestion whatsoever therein as to any such adhesive on any tape having such characteristics. Applicants assert that the adhesive layer of the Weng et al. reference cannot and does not teach or suggest any such adhesives having any such characteristics because the Weng et al. reference merely teaches or suggests a tape having an adhesive which destructs under radiation leaving no mark or residue on the semiconductor surface, Such is not the claimed elements of any of the claime inventions of presently amended independent claims 1, 9, and 17.

In each instance of the various embodiments of the Weng et al. reference, the semiconductor device is marked using an etchant, not a laser. In Ishawa et al. the adhesive is used to form only three dimensional networks. The claimed inventions of presently amended independent claims 1, 9, and 17 contain the claim limitations for a tape having at least two layers of different adhesive thereon having different characteristics. The first layer of adhesive has different properties than that of the second layer of adhesive. The different properties of the first layer of adhesive and the second layer of adhesive are clearly distinct from each other as both described in the independent claims 1, 9, and 17 and in Applicants' disclosure. Such properties are set forth in the claimed inventions of presently amended independent claims 1, 9, and 17.


In contrast to the claimed inventions, the Weng et al. reference merely teaches or suggests a single layer of adhesive. Applicants assert that all words in a claim must be considered in judging the patentability of that claim against the prior art. *In re Wilson*, 424 F.2d 1382, 165 USPQ 496 (CCPA 1970) MPEP § 2143.03. Applicants assert that neither the Weng et al. reference nor the Ishiwata et al. reference nor any combination thereof teaches or suggests the use of a second adhesive layer different than the first outermost adhesive layer. Accordingly, Applicants assert that the rejection does not and cannot establish a *prima facie* case of obviousness under 35 U.S.C. § 103 because all the claim limitations are not taught or suggested by the prior art. *In re Robka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) MPEP § 2143.03. Therefore, presently amended independent claims 1, 9, and 17 are allowable as well as the dependent claims therefrom.

Applicants submit that claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 are clearly allowable over the cited prior art.

Applicants request the allowance of claims 1, 3, 4, 6, 8, 9, 11, 12, 14, 16, 17, 19, 20, 22 and 24 and the case passed for issue.

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Respectfully submitted,



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